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ABSTRACT

An attempt to identify methods of human resource management that emerge as schools and classrooms become more effective, this literature review emphasizes the importance of administrator "support functions," which include feedback to teachers, monitoring of teacher and student performance, incentives for teachers, and visible commitment to change. A brief introductory section describes current research findings on the actual situation in schools today, with a focus on factors serving as potential barriers to educational change. Next, the literature on educational change and the implementation of educational innovations, such as Project Follow Through, is critically reviewed. A third section looks at the literature on effective schools, especially those in low-income areas, and instructional leadership. A synthesis of these findings leads to the concept of support functions, which is explained in some detail. The authors emphasize that these functions can be performed by a principal, supervisor, change agent, or other administrator. The final section offers a conceptual model for looking at and measuring some critical aspects of implementation attempts in core curriculum areas. A concluding brief description of a case study shows how the concept of support functions can lead to potentially fruitful analyses and empirical investigations of change. (Author/JM)

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Administrative and Supervisory Support Functions for the Implementation of Effective Educational Programs for Low Income Students

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The last decade has produced a rather convincing body of knowledge on effective teaching practices in the elementary grades (Clark, Lotto, and McCarthy 1980; Cooley and Leinhardt 1980; Fischer et al. 1980; Good 1979; Medley 1977; Rosenshine 1980; Rosenshine and Berliner 1978; and Stallings 1975 and 1980). These studies report teacher performance variables and classroom organizational variables that seem to be consistently correlated with large gains in basic academic skills. This set of variables has been labelled direct instruction by Rosenshine (1980) and active teaching by Good (1979). Although the methodologies of these studies vary, they all basically agree that effective teachers

a) cover large amounts of academic material and structure so that a good proportion of class time is spent in core areas of reading, arithmetic, and language arts;

b) use teaching materials that are highly structured and that elicit a high proportion of correct student responses;

c) conduct much of the instruction in small groups (as opposed to independent seatwork); and

d) provide immediate, academically-oriented feedback to students.

Good suggests the term "active teaching" may be preferable to "direct instruction":

> This label suggests a broader philosophical base in that it can occur in classrooms using a variety of organization (activity) structures and because it may be desirable for active teaching to become less direct as students become more mature or instructional goals become concerned with affective and process, as opposed to achievement, outcomes (in press, p. 15).

A more recent line of research on effective teaching has used the school as a unit of analysis (Brookover et al. 1979; Edmonds 1979; Rutter et al. 1979; Weber 1971). Despite some methodological problems in the definition of effectiveness (cf. Cohen et al. 1980; Scott and Walbert 1979), here too some consistent patterns seem to recur. Effective schools have (a) a consistent academic focus across all classrooms (i.e., on reading and math), (b) high expectations of all students, and (c) a system of monitoring student progress. The school effectiveness writers tend to emphasize non-quantifiable variables like the ethos of the school (Rutter et al. 1979) or the leadership qualities of the site administrator, but there are also many concrete, measurable variables in their work (e.g., the use of a monitoring system, consistently high levels of allocated academic time, and a consistent, coherent curriculum for the entire school).

A complementary picture emerges from these two lines of research--a vision of relatively smoothly running schools with a strong academic emphasis, high expectations of all students, selection of materials so that students experience high success rates, frequent assessment of student progress, and an active principal who knows what is going on in every classroom. This picture contrasts dramatically with the description of schools as they typically exist--"loosely coupled" organizations with no consistent academic focus or policy, where principals have little say over what goes on in the classroom, and where student achievement is considered merely one goal among many.

A major research issue, then, is to identify the consistent patterns in human resource management that emerge as schools approach the "ideal"

described by Edmonds and Rutter and as classrooms within the school approach the "ideal" described by Rosenshine and Good.

The current paper is a step in that direction. First, a brief section describes current research findings on schools as they exist, focusing on those factors which seem to serve as potential barriers to educational change. Next, the literature on educational change and the implementation of educational innovations is critically reviewed. A third section returns to the literature on effective urban schools and the concept of instructional leadership. A synthesis of these findings leads to the concept of support functions, which is explained in some detail. The final section offers a conceptual model for looking at and measuring some critical aspects of implementation attempts in core curriculum areas.

Schools As They Currently Exist

In a recent paper, Meyer, Scott, and Deal sum up much contemporary research on education by stating that schools are not, and never have been, organized around a knowledge base for delivering quality instruction to students.

> . . . it is most crucial for a school, in order to survive, to conform to institutional rules--including community understandings--defining teacher categories and credentials, pupil selection and definition, proper topics of instruction, and appropriate facilities. It is less essential that a school make sure that teaching and learning activities are efficiently coordinated (1979, p. 3).

Georgiou (1973) suggests that the actual constituents to be served by schools are the individuals composing the school organization. His

implication is that schools exist for teachers, not students. Wolcott (1977) said that teachers value neither control, rational planning, nor progress, but rather their autonomy and their uniqueness in understanding and appreciating their craft. A similar vision is implied in Burlingame's (1978) description of schools as social systems bound together by shared "secrets" about staff, students, and students' families, and by what he labels the seasons of the school year--the predictable events revolving around sports, vacations, etc. The result of these visions of teaching can be a climate and set of expectations that place relatively little emphasis on coordinating instruction to enhance student achievement. While there are some schools that do have a formal system of coordination and control, this is not the case for most urban schools (Cohen et al. 1977).

Loose Coupling

One reflection of the relatively low importance attached to efficient coordination of instruction is the phenomenon commonly called loose coupling (Weick 1976). Generally administrators do not systematically monitor their subordinates' teaching behavior. Classrooms are often characterized as autonomous units, cottage industries, or cellular organizations. Teachers often act independently of principals (Wolcott 1973), just as principals usually act independently of central administrators (Morris et al. 1981). Principals' policy pronouncements about instruction bear no consistent relationship to what happens in classrooms. According to Lortie, what "is most central and unique to schools--instruction--is least controlled by specific and literally enforced rules and regulations" (1975, p. 14).

Parish (1981) refers to the relationship between teachers and principals as an informal-covenant. According to the covenant, teachers "agree" to implement the innovations suggested by the principal by attending workshops on the innovation. However, as Parish also observed, principals rarely expect the teachers actually to implement the program and virtually never follow up or observe actual classroom practices.

> Efforts to actually inspect educational outputs, to coordinate the specifics of what is taught to individual students by particular teachers would invariably increase conflicts with parents and students, cause dissatisfaction among teachers, and vastly increase the burdens of administrators (Meyer, Scott, and Deal 1979, p. 18).

If schools as organizations do not have efficient coordination of instruction as a major goal, then principals can not be expected to be "instructional leaders."

> Conventional wisdom specifies that the principal's primary job is the evaluation and upgrading of instruction. But principals spend very little time in the classroom observing teaching. Instead, they use their time cultivating good learning conditions by managing the psychic ambiance of the school community (Morris et al. 1981, p. v).

Howell (1981) found that less than two percent of principals' time involves instructional leadership. Nor do teachers perceive principals as instructional leaders (Mazzarella 1977). "It appears that such direct and hierarchical control of technical workers is rare in the school, even under conditions of strong environmental demand for instructional outcomes" (Cohen and Miller 1980, p. 470).

Principals buffer teachers, who want to retain their autonomy, from central administrators, legislators, and parents, who want to exert influence

over classroom practice (Morris et al. 1981). Burlingame states, "The principal finds three avenues of escape: the blandness of platitudes, the joys of paperwork, and the solace of administrative colleagues in other settings" (1978, p. 12). Obviously, the principal's role, as currently conceived, does not usually include promoting, monitoring, or enhancing innovations.

In short, the principal is not typically a technocrat operating in accord with the dictates of control, rational planning, and progress. Nor are schools organized in conformity with those dictates (Cohen et al. 1977). In fact, Weick (1976) endorses loose coupling because it allows for

a) a greater number of mutations and novel solutions and therefore can adapt to a wider range of changes in the environment;
b) spread of a breakdown or deterioration in one portion of the system to be sealed off and thus not affect other portions;
c) more room for self-determination by the members of the organizations, thereby increasing the sense of efficacy for each; and
d) less expense for administration since it takes time and money to coordinate people.

The argument in support of loose coupling and other prevailing school organization patterns is flawed in two ways. First, while schools as they

are presently organized may adequately serve middle- and upper-middle-class students, they utterly fail in teaching poor and minority students. In a thorough review of factors associated with success in urban education, Clark, Lotto, and McCarthy conclude that successful urban schools "happen as a result of logical and rational decisions and actions on the part of educational policy planners, teachers and/or parents" (1980, p. 145). Thus to legitimize loose coupling is tantamount to endorsing an inferior education for poor and minority students.

The second flaw has to do with the existence of viable alternatives to loose coupling. Current research provides empirical data supporting the effectiveness of such possible alternatives. An extensive educational technology for the primary grades exists. These new findings justify more rational organizations for schools. Loose coupling is not the only viable organizational pattern for schools.

The Change Process

The contrast between schools as they are and schools as they can be has a parallel in the change process--how change actually occurs (or appears to occur) versus how it could occur. The major studies of curriculum reform have shown that where training, introduction of materials, vertical political solidarity, and staff and administrative commitment are brought together, there is considerable change.

Major changes are rare, however, in the core curriculum areas of reading, mathematics, and language. Often, schools that advertise themselves as "innovative" deserve that label only insofar as they are better

managed. Very few schools have generated patterns of inservice education or of school staff organization which are different from the norm. Educators tend to channel reform into "safer areas--those that involve the kinds of change in curriculum or administration that don't seem to threaten organized groups in or out of the bureaucracy" (Pincus 1974, p. 124).

Change efforts often fail because the espoused goal of schooling--educating students--is defined differently by different practitioners. In fact, Meyer, Scott, and Deal (1979) discuss how this may not necessarily be the actual, primary goal of many practitioners. For instance, when those with a technological or research orientation speak about effective practices, practitioners often perceive threats to their status, power, or work demands--variables having only remote connections to instructional practices. As a consequence of these differing orientations, organizational members vary considerably in what they value and in how they react to attempts to introduce or maintain change efforts.

In summary, significant educational change is difficult to initiate and maintain because the innovative practices often contradict the reality of schools. For the most part, schools are loosely coupled, do not have a structure or environment conducive to schoolwide coordination, and are comprised of individuals with views quite different from those of empirically-based educational technologists. (See Wolcott [1977] for a thorough case study of these conflicts.)

These contradictions point to a major research area: reconciling effective educational practices culled from research with the reality of typical school structure. Naive change agents have attempted to turn schools into

tight organizational structures, in which individual interests defer to organizational goals and to create environments that support practices promoting student learning. Attempts to transform schools into these types of organizations have largely failed, especially in schools that serve poor, minority students. New research should be more pragmatic and should attempt to investigate alternatives to tighter coupling mandated from the top down and carried out by the principal.

Factors Related to the Effective Implementation of Educational Change

A comprehensive study of educational change efforts was conducted by Berman and McLaughlin (1975, 1977, and 1978). They found three factors related to enduring educational change.

1. Quality of Technical Assistance

   Concrete, extended inservice training of teachers in the specific details of the model (including timely, practical advice by consultants or staff members on classroom issues) led to innovations which were more likely to endure.

2. Mutual Adaptation

   Projects that emanated from perceived local needs, and that allowed teacher participation in policy decisions and modifications of curricular materials, were more likely to endure.

3. Support

Both emotional support by principals and teachers and visible support by principals (e.g., availability of curriculum materials) were esential for continuation.

Recently, Datta (1980 and 1981) challenged the second finding (mutual adaptation) by indicating that many projects assessed by Berman and McLaughlin were weak, loosely-defined interventions. Furthermore, since most of the projects evaluated by Berman and McLaughlin were legally mandated to have strong input from local personnel, the mutual adapation finding was largely artifactual. Certainly it is difficult to generalize from one sample to other, more clearly articulated change efforts. Datta urged more serious investigations of directed change efforts, particularly of programs in which an external change agent offered a clearly articulated program and high levels of extended, concrete technical assistance to teachers and paraprofessionals. Two prime candidates are the national Follow Through Project (Stebbins, et al. 1977)--which Datta cites as "the model of directed change efforts--and recent experimental studies of the implementation of direct-instruction teaching procedures in school districts.

Several experiments in actual school settings have been conducted to examine whether inservice and preservice training in the methods of direct instruction and active teaching could seriously affect (a) teacher behavior and (b) student learning (Anderson and Brophy 1976; Gage and Colardarci 1980; Gage and Crawford 1978; Gall et al. 1975; Good, Ebmeier,

and Beckerman 1978; Stallings 1980). In each case, the researchers were attempting to implement an educational program that previous research (either descriptive or correlational) had demonstrated as having a positive impact on student achievement. Teacher training was generally conducted by members of the research staff trained in direct instruction. In all cases but one (Gage and Colardarci 1980), results indicated that inservice training in direct instruction could affect teacher classroom performances and increase student gains in achievement.

In a thorough analysis of these experimental studies, a National Institute of Education report concludes,

> The direct instructional model provides teachers with a description of an optimal classroom condition, a way of thinking about what goes on in the classroom, and a criterion against which to measure the effects of experimenting with different structures and approaches.
>
> The model does not, however, provide much guidance to teachers on how to implement direct instruction. Decisions on the nature of instructional activities, the nature, size and composition of instructional groups, strategies for motivating and rewarding student behavior, and coping with considerable diversity of student ability and prior performance within the classroom must be made. Systematic knowledge to guide these decisions is lacking (Cohen et al. 1980, p. 11).

They go on to delineate issues in classroom management, motivational and reward systems for low-income students, the grouping and placement of students, and allocation of time.

Many of the issues the authors of the NIE paper (Cohen et al. 1980) raise have been addressed, albeit in a less rigorous fashion, in the quasi-experimental research conducted in conjunction with the national Follow

Through Project (Gersten, Carnine, and Williams, in press; Gersten et al. 1981; Kennedy 1978; Leinhardt 1977; Stallings 1975; Stebbins et al. 1981). In the Follow Through Project, teachers were given extended inservice training by both local supervisors and outside consultants trained in a specific educational model. In her extensive observations of Follow Through classrooms, Stallings (1975) reported that, with the high levels of technical assistance provided by the Follow Through consultants, teachers in most instances were actually implementing the educational model they were supposed to be implementing. One of the seven Follow Through approaches evaluated by Stallings was the Direct Instruction model, which is grounded in the principles of direct instruction and active teaching specified above, but which also includes many of the features that the NIE report (Cohen et al. 1980) cites as necessities--clearly articulated principles for student placement, ways of increasing student motivation, and systems for time allocation.

Using exploratory data analysis techniques, Kennedy (1978) noted how the two most clearly articulated and specified Follow Through progams (the Behavior Analysis and Direct Instruction models) demonstrated less variability in effectiveness across sites than did less clearly articulated models. Both she and Stebbins et al. (1977) discussed how only the Direct Instruction and Behavior Analysis educational models could be effectively implemented in large urban school districts.

Gersten et al. (in press) demonstrated strong relationships between the observed level of implementation and the levels of student achievement in seven schools in one large urban Follow Through site. Interviews with

teachers (reported in Cronin 1980), showed that the clarity of the model, and especially the practical nature of supervisors' feedback, were consistently deemed the most positive features of the model. Teachers discussed how useful it was to get down-to-earth, specific answers to questions on motivating low-performing students, correcting student errors, placing children, and other matters. This parallels one of the major findings of the Berman and McLaughlin (1978) report--namely, the importance of frequent, concrete technical assistance. A consistent finding in the interviews was that as teachers observed dramatic improvements in student performance, their attitudes toward the innovation gradually changed. Many teachers initially disliked the highly structured program, finding it alien to their humanistic beliefs. Yet, as the year progressed and they saw the immense gains the students made in reading and language, they began to rethink their educational philosophy. Another interesting finding was that building principals were consistently seen as irrelevant to the implementation process.

Integrating these experimental and quasi-experimental findings yields the following generalizations about the implementation of the direct-instruction or active-teaching model.

1. With inservice training, teacher behavior can be consistently altered to include components of active teaching.

2. These changes seem to be related to increased student academic gains, at least in the basic skills areas of reading and math.

3. These changes can be made without the active support of the building principal, although his or her gradual support may improve the

model's chances of lasting in the school (see Herriott and Gross 1979).

4. Both the clarity of the educational model and the specificity of supervisor feedback appear to be highly valued by teachers.

5. Most direct-instruction or active-teaching models lack clarity on the issues of classroom management, reward and motivation structures (Doyle 1977; Dreeben 1979), the placement of students, and the allocation and organization of time (Cohen et al. 1980). There are, however, two Follow Through models (Direct Instruction and Behavior Analaysis) that offer a reasonable degree of specificity on these issues. In any case, research on direct instruction should address--and measure--these unclarified issues.

Research on the Institutionalization of Educational Change

Virtually everyone recognizes that if education and innovations are to endure, they must become integrated into the school district. The past five years have seen a growing emphasis on the pivotal role of the building principal in institutionalizing innovative practices.

In his research on a wide range of innovations, Hall concludes:

> Further, our own research findings lend evidence to the notion of the importance of the administrator to the change process. Our three-year longitudinal study of 19 elementary schools in a large school district yielded some relevant and intriguing findings. . . . Schools implementing the same innovation with the same district-level support, and the same initial Levels of Use and Stages of Concerns profiles for teachers do not undergo the change process uniformly. At the end of the second year of implementation, teachers in a few schools (3 out of 21) had progressed from being nonusers to having intense impact concerns at Stage 4, Consequence

> (i.e., impact of their teaching on student learning). In contrast, the other schools, including several that had actually begun the implementation process earlier, had teachers whose concerns stages were still most intense at Stage 3, Management. It appeared that the principals in these three schools functioned differently, and as a consequence, impacted differently the course of the change effort (1979, p. iv-30).

Descriptive studies of effective schools for low-income students consistently show that the principal plays a strong role in their success--by articulating a schoolwide emphasis on reading and math, setting high expectations of students, sharing a belief that teachers are responsible for students' learning, not blaming parents and environmental factors for failure, and visibly backing up this commitment by actively monitoring student progress (Clark, Lotto, and McCarthy 1980; Edmonds 1979). Although these studies do not deal with innovations in the literal sense, they discuss schools that have, for various reasons, internally developed programs with high levels of academic learning time.

Edmonds (1979) outlines five components that appear to be present in effective schools for low-income students.

1. Strong administrative leadership.

2. A climate of high expectations of all students. If a child is not learning, it is considered the teacher's--not the child's or the community's--responsibility.

3. A primary emphasis on acquiring basic skills. "Effective schools get that way partly by making it clear that pupil acquisition of basic school skills takes precedence over all other school activities" (Edmonds 1979, p. 22).

4. A consistent educational program at all grade levels.

5. Frequent monitoring of student progress.

Edmonds culled these five components from his own research and from similar studies (e.g., Brookover et al. 1979; Weber 1971).

Like Hall (1979) and Berman and McLaughlin (1975, 1977, and 1978), Edmonds stresses the role of the site administrator, especially his or her effects on the ethos and value systems in the school. Edmonds also stresses the need for the principal to monitor student progress. It would appear, from both the Edmonds work and the innovation research, that a key to enduring, sustained educational change is the site administrator.

Berman and McLaughlin's analysis of successful change efforts reiterates many of the same motifs that Edmonds (1979) used in his depiction of successful schools.

> The principal's unique contribution to implementation lies not in "how to do it" advice better offered by project directors, but in giving moral support to the staff and in creating an organizational climate that gives the project "legitimacy." The principal's support was also crucial for continuation. Teachers were unlikely to continue a full array of project methods without the sanction of their principal, even if the methods were successful and had been assimilated (Berman and McLaughlin 1978, p. viii).

To reiterate, it appears that site administrators, through their visible and clear support, can decidedly affect the implementation and institutionalization of educational change. At schools where the principal supports the innovation, there is typically less variance among teachers in their assessed levels of implementation, and a higher likelihood that the innovation will endure.

Functions Versus Roles

The findings noted above stress the vital activities of site administrators in effective schools (Clark, Lotto, and McCarthy 1980; Edmonds 1979; Hall 1979; Hall, Hord, and Griffin 1980; Rutter et al. 1979). Yet the typical principal's role does not include these activities (Howell 1981; Morris et al. 1981; Wolcott 1973). Since a radical redefinition of the principal's role is at present unlikely, a better avenue for change might be to focus on the actual activities that need to be performed, rather than on the role of the principal (Elmore 1979).

Our own prior research in a large urban district demonstrated how an educational change effort was successfully implemented in seven low-income schools over a two-year period (Gersten et al. 1981). The effort was generally considered a success by the local press, the court, and the administration--primarily because of demonstrable gains in academic achievement. Interviews with teachers indicated that, in six of the seven schools, they perceived the building principal to be irrelevant to the implementation process. The key to success was consistently related to high levels of concrete technical assistance on day-to-day classroom matters. Datta (1981) and Kennedy (1978) have demonstrated that effective federally-supported programs may be implemented without much support from administrators. Gutkin, Gersten, and Meyer (1981) have detailed how a successful education program was implemented in an inner-city school over thirteen years with seven different principals. Here again, key elements appear to be:

a) a clearly articulated education model;

b) a consistent program, with an academic emphasis, at all grade levels;

c) frequent and relatively objective monitoring of student progress; and

d) high levels of concrete technical assistance.

Note that these studies parallel much of Edmonds' work without alluding to a mystique of leadership. Rather, they detail things that must be done. Elmore (1979) stresses the importance for implementation research of looking at the critical behaviors of teachers and supervisors, rather than at the articulated policies of administrators. It appears that policies to support the key elements may be set and performed by the principal, a local supervisor, a Federal change agent, fellow teachers, or by a combination of the four.

The concept of support functions (Carnine and Gersten, in press) --which include feedback, monitoring, incentives, and visible commitment-- is more encompassing than the concept of instructional leadership. There are four reasons why this appears to be a more reasonable approach than looking merely at leadership or the role of the site administrator.

1. Functions are much easier to define, operationalize, and measure than is an elusive notion like "leadership." Furthermore, the functions should be measured in observable events--visits to classrooms, verbal utterances of the principal, monitoring, and so forth.

2. When sociologists have empirically examined the effects of leadership in a variety of settings using a variety of models, "none of

them [the theories and models of leadership] systematically accounts for very much criterion variance" (Kerr, 1978, p. 2). Kerr argues that it makes more sense to measure subordinate attributes such as competence, knowledge, and observable performance--what he calls "substitutes for leadership" (Kerr 1978, and Kerr et al. 1974). Kerr also argues that leadership is not an innate quality in human beings--that the nature of the school and situational variables can bring forth "leadership" qualities in an individual who previously did not exhibit them. He also argues that one should look at the whole leadership structure (i.e., the principal, vice-principal, supervisor, etc.) rather than focus only on the site administrator.

3. Descriptive research over the last decade has consistently shown that, despite the rhetoric, principals are generally not perceived as instructional leaders by the teaching staff (Mazzarella 1977; Morris et al. 1981; Wolcott 1973). Granted, there are the exceptions, the rare schools, cited by Edmonds (1979). But, on the whole, a team approach in which principals act in concert with supervisors, teachers, and curriculum specialists appears to make more sense.

4. An analysis of <u>support functions</u> can give coherence to comprehensive, multi-level, multi-instrument studies of educational innovations. Most studies of educational change focus on only one or two aspects of the process. Some examine teacher behavior and teacher perceptions of the implementation's success while ignoring administrative aspects. Others use only classroom-level observations of the degree of implementation.

The concept of support functions offers researchers a focus to use in their attempts to integrate findings from several sources (teachers, supervisors, principals, administrators, and external change agents) using a variety of techniques (naturalistic observations, interviews, and questionnaires).

For these reasons, it seems more reasonable to examine support functions as they exist in a school than to examine separately the role of the principal, the supervisor, or the educational change agent. Our view is that it is less important who performs the functions in a school than it is to what extent the functions are performed.

Support Functions Necessary for Successful Educational Change

Past research on efforts at educational change suggests several plausible key elements, or support functions, in successful change and the institutionalization of that change. Several of these support functions are listed below:

a) consistent, concrete feedback and technical assistance to teachers (Berman and McLaughlin 1975; Gersten et al. 1981);

b) leadership functions exercised by a site-level administrator with a visible commitment to the innovation (Edmonds 1979; Hall, Hord, and Griffin 1980; Morris et al. 1981);

c) incentives and emotional support for teachers from peer groups and/or administrators (Bredo 1977; Peterson 1980);

d) a clearly articulated educational innovation (Datta 1980; Kennedy 1978);

e) a monitoring system (Fullan 1980);

f) mutual adaptation; that is, both the change agent and the school district have a stake in the articulation and adaptation of the innovation (Berman and McLaughlin 1975); and

g) a clearly articulated plan for institutional change (Glaser and Ross 1971; Herriott and Gross 1979; Hersey and Blanchard 1977; Ranson, Hinings, and Greenwood 1980).

There is some controversy over most of the components listed above. For example, the literature fails to articulate how--and if--"leadership" and "visible commitment" can be induced in site administrators who do not exhibit these traits. As Datta (1980 and 1981) and Centra and Potter (1980) point out, more serious work needs to be done in articulating exactly what "mutual adapation" means and in determining at what stage an innovation becomes so modified and diluted by local personnel that it no longer bears much resemblance to the original model.

Nevertheless, given a clearly defined innovation and a specific strategy for change, one can derive from the existing literature a listing of those behaviors and policies of administrators and supervisors that appear to be necessary for innovations to be implemented and sustained. Five of these support functions aiding implementation are illustrated below.

One important function is showing visible commitment to the innovation. Situational leadership theory (Hersey and Blanchard 1977) suggests that if an administrator is not interested or energetic about change, others must become task oriented and assume responsibility for planning and interaction. In any case, clarification of responsibilities is important (Wyant 1980). As interest in the innovation grows, responsibility for the implementation can be shared. Work on leadership styles (selling, telling, consulting, testing, joining, and delegating) is also relevant to shaping goals and expectations.

Even more effective in conveying the importance of the innovation is monitoring both teacher performance and student learning (degree of mastery and content covered). This is another essential function; its importance has been stressed by Edmonds (1979) and Brookover et al. (1979). Student learning can be monitored by periodically reviewing summaries of student performance on criterion-referenced tests and by noting the amount of material covered in each subject area (see, for example, Becker and Engelmann 1976; Chaps. 5 and 6). Informal monitoring systems are also possible, using classroom observations and noting whether transition times are orderly or whether time is wasted, or reviewing workbooks to determine whether materials are at an appropriate difficulty level. Monitoring teacher performance and student learning is the core of the second support function --being aware of how well the innovation is being implemented.

A third function for supporting an innovation is providing appropriate, effective technical assistance to teachers. Being aware of teacher performance and student learning is futile unless the information can be used

constructively. Linking teachers with efficacious assistance is a critical task. Principals themselves do not need to provide the assistance (Wyant 1980). However, teachers cannot be expected to make major changes in their practice without competent help from someone. Technical assistance can also indirectly influence teachers' motivation to incorporate innovative practices. Learning skills that produce obvious, desirable change in students is rewarding for many teachers (Lortie 1975).

Understanding the fourth function, incentive systems, involves a thorough analysis of both incentives for change and incentives for keeping things the way they are. Interviews and questionnaires may generate information about what educators say is important, but they ususally do not reveal what educators actually treat as important. Motives are obscured by espoused goals (Argyris and Schon 1974). A more revealing procedure is to identify the actual rewards and sanctions, both formal and informal, that operate in the organization. Naturalistic observations and interviews reveal how educators spend their time and what they talk about, as well as the criteria used for promoting individuals in the organization, the nature of current instructional practices, and the like.

Herriott and Gross (1979) have developed a model of the change process. This helps elucidate the fifth support function: explicit strategies for installation and maintenance. The Herriott-Gross model has five stages, comprising exploration, strategies planning, initiation, attempted implementation, and incorporation/rejection. Typically, change efforts focus on the first and third stages (exploration and initiation). For example, validated educational programs affiliated with the National

Diffusion Network typically conduct awareness workshops in interested districts. They rarely give any attention to planning strategies for the continuous implementation and incorporation (or institutionalization) of the new program. Naivete about strategies planning can be disastrous--consider the case studies reported by Herriott and Gross (1979) in which several superintendents who unilaterally mandated innovations subsequently lost their jobs.

Applying the Concept of Support Functions: An Illustrative Case Study

Recently a large urban district began implementation of a highly structured education program in 17 low-income elementary schools. The move was in direct response to a mandate by the court to improve the quality of education at these schools.

The district's implementation plan incorporated many of the features recommended in the literature on successful implementation and effective urban education. The educational program was based on two validated educational approaches--the Direct Instruction model (Becker and Carnine 1980) and the mastery learning approach (e.g., Bloom 1976). The administration also felt that, in order to create a sense of ownership and thereby both reduce resistance to change and increase the likelihood of institutionalization, a mutual adaptive approach (Berman and McLaughlin 1975, 1978) was needed. A team consisting of the assistant superintendent, several principals, and supervisors and curriculum specialists from the district spent the summer adapting features of direct instruction and mastery learning to the basal reading and math series currently in use in the district.

The implementation also called for high levels of concrete technical assistance to teachers (Berman and McLaughlin 1977; Datta 1981; Gersten et al. 1981). Each school was given a "resource teacher" whose sole responsibility was to assist teachers in understanding and implementing the new program. In addition, the plan followed the literature in stressing the need for the active involvement of the building principal (Edmonds 1979; Hall, Hord, and Griffin 1980). The assistant superintendent personally conducted biweekly inservice training sessions with the 17 principals on many of the issues cited by Edmonds, such as the use of criterion-referenced tests to monitor student progress, the criteria for classroom observations, and the coordination of inservice training.

Last winter, a pilot study was conducted in this district. Semi-structured interviews with administrators, principals, and supervisors examined the progress of the implementation, their perceptions of positive and negative aspects, and the perceived impact on students. The interviews concentrated on the support functions listed above.

Several things became immediately clear:

1. There are real advantages to interviews with educators at different personnel levels. Central administrators tended to paint a much rosier picture than did principals. In several cases, supervisors' perceptions diverged significantly from those of their respective principals.
2. Interviews alone are not enough. One also needs to look at teacher behavior, teacher-child interactions, and the actual behavior of principals and supervisors,

using the methods of Morris et al. (1981) but focusing primarily on instructional issues.

3. As Berman and McLaughlin (1975 and 1977) would predict, the mutual adaptation process utilized by the district led to a real sense of ownership by supervisors and principals. All but one principal and all of the supervisors expressed great enthusiasm for the model. It was unclear, however, whether many of the supervisors and principals had the skills to offer realistic, concrete technical assistance. Some were quite candid about their limitations; others were vague. Further research using naturalistic observations could clarify this issue.
4. To varying degrees, all the principals admitted that, although their administrator inservice training was invaluable, they were unable to regularly carry out many of these activities--such as classroom observation or the monitoring of criterion-referenced tests--because of the other demands of their jobs (budget, community relations, and so on). This corroborates the recent findings of Morris et al. (1981).
5. There was a good deal of variance between schools in the expressed enthusiasm for the program, the rapport between the principals and resource teachers, and

the technical knowledge of the resource teacher. Future research should examine the effects of these variations on teachers' attitudes and knowledge, the degree of implementation at the classroom level, and student achievement.

In short, this case study shows how the support functions can lead to potentially fruitful analyses and empirical investigations of change.

REFERENCES

Allen, A., and Gersten. R. "Interviews on Support Functions." Unpublished manuscript. Eugene, Ore.: University of Oregon, 1981.

Anderson, L., and Brophy, J. "An Experimental Investigation of First Grade Reading Group Instruction." Austin, Tex.: University of Texas Research and Development Center for Teacher Education, 1976.

Argyris, C., and Schon, D. Theory into Practice: Increasing Professional Effectiveness. San Francisco: Jossey-Bass, 1974.

Becker, W. C., and Carnine, D. "Direct Instruction: An Effective Approach for Educational Intervention with the Disadvantaged and Low Performers." In Advances in Clinical Child Psychology edited by B. J. Lahey and A. E. Kazdin. New York: Plenum Press, 1980.

Becker, W. C., and Engelmann, S. Teaching 3: Evaluation of Instruction. Chicago: Science Research Associates, 1976.

Berman, P., and McLaughlin, M. W. "Federal Programs Supporting Educational Change Vol. IV: The Findings in Review." Santa Monica, Calif.: Rand Corporation, 1975.

Berman, P., and McLaughlin, M. W. "Federal Programs Supporting Educational Change : Factors Affecting Implementation and Continuation." Santa Monica, Calif.: Rand Corporation, 1977.

Berman, P., and McLaughlin, M. W. "Federal Programs Supporting Educational Change Vol. III: Implementation and Sustaining Innovations." Santa Monica, Calif.: Rand Corporation, 1978.

Bloom, B. Human Characteristics and School Learning. New York: McGraw-Hill, 1976.

Bredo, A. E. "Principal-Teacher Influence Relations in Elementary Schools." Paper presented at the annual meeting of the American Educational Research Association, April 1977 in New York.

Brookover, W. and others. Schools Can Make a Difference. East Lansing, Mich.: College of Urban Development, Michigan State University, 1979.

Burlingame, M. "Coordination, Control and Facilitation of Instruction within Schools." Paper presented at the School Organization and Effects Conference of the National Institute of Education, January, 1978, in San Diego, Calif.

Carnine, D., and Gersten, R. "Incentives, Effectiveness, and Strategies for Introducting and Maintaining Innovations. Unpublished manuscript. Eugene, Ore.: Center for Educational Policy and Management, University of Oregon, 1981.

Centra, J. A., and Potter, D. A. "School and Teacher Effects: An Interrelational Model." Review of Educational Research 50 (1980): 274-291.

Clark, D. L., Lotto, L. S., and McCarthy, M. M. "Factors Associated with Success in Urban Elementary Schools." Phi Delta Kappan 61 (1980): 467-470.

Cohen, E. G., and Miller, R. H. "Coordination and Control of Instruction in Schools." Pacific Sociological Review 23 (1980): 446-473.

Cohen, E. G., Miller, R. H., Bredo, A., and Duckworth, K. "Principal Role and Teacher Morale under Varying Organizational Conditions." Research Monograph. Stanford, Calif.: Stanford Center for Research and Development in Teaching, 1977.

Cohen, M., Koehler, V., Datta, L., and Timpane, M. "Instructionally Effective Schools: Research Area Plan." Unpublished manuscript. Washington, D.C.: U.S. Department of Education, National Institute of Education, 1980.

Cooley, W. W. and Leinhardt, G. "The Instructional Dimensions Study." Education Evaluation and Policy Analysis 2 (1980): 7-25.

Cronin, D. P. "Implementation Study, Year 2: Instructional Staff Interviews." Los Altos, Calif.: John A. Emrick, 1980.

Datta, L.-E. "Changing Times: The Study of Federal Programs Supporting Educational Change and the Case for Local Problem Solving." Teachers College Record 82 (1980): 101-115.

Datta, L.-E. "Damn the Experts and Full Speed Ahead." Evaluation Review 5 (1981): 5-31.

Doyle, W. "Paradigms for Research on Teacher Effectiveness." In Review of Research in Education, Vol. 5, edited by L. S. Schulmann. Itasca, Ill.: F. E. Peacock, 1977.

Dreeben, R. "Analysis of Classroom Productivity." Progress Report. Chicago: Education Finance and Productivity Center, University of Chicago, 1979.

Edmonds, R. "Effective Schools for the Urban Poor." Educational Leadership 37 (1979): 15-24.

Elmore, R. "Backward Mapping: Implementation Research and Policy Decisions." Political Science Quarterly 94 (1979): 601-616.

Fischer, C. W., Berliner, D. C., Filby, N. N., Marliave, R., Cahen, L. S. and Dishaw, M. M. "Teaching Behaviors, Academic Learning Time and Student Achievement: An Overview." In Time to Learn, edited by C. Denham and A. Lieberman. Washington, D.C.: U. S. Office of Education, National Institute of Education, 1980.

Fullan, M. "Research on the Implementation of Educational Change." In Research on Organizational Issues in Education, edited by R. Corwin. Greenwich, Conn.: JAI Press, 1980.

Gage, N., and Colardarci, T. "Replication of an Experiment with a Research-Based Inservice Teacher Education Program." Palo Alto, Calif.: Center for Educational Research at Stanford, 1980.

Gage, N., and Crawford, J. "An Experiment on Teacher Effectiveness and Parent-Assisted Instruction in the Third Grade. Vol. 1: Preliminary Final Report." Palo Alto, Calif.: Center for Education Research at Stanford, 1978.

Gall, M. D., Ward, B. A., Berliner, D. C., Cahen, L. S., Crown, K. A., Elashoff, J. D., Stanton, G. C., and Winne, P. H. "The Effects of Teacher Use of Questioning Techniques on Student Achievement and Attitude." San Francisco: Far West Laboratory for Education Research and Development, 1975.

Georgiou, P. "The Goal Paradigm and Notes Toward a Counter Paradigm." Administrative Science Quarterly 18 (1973): 291-310.

Gersten, R., Carnine, D., and Williams, P. "Measuring Implementation of a Structural Educational Approach: An Observational Approach." Educational Evaluation and Policy Analysis, in press.

Gersten, R., Carnine, D., Zoref, L., and Cronin, D. "Measuring Implementation of Educational Innovations in a Broad Context: Reflections on the Evolution of a Model-Specific Observational Code." Paper presented at the annual meeting of the American Educational Research Association, April 1981, in Los Angeles.

Glaser, E. M., and Ross, H. L. Increasing the Utilization of Applied Research Results. Los Angeles: Human Interaction Research Institute, 1971.

Good, T. "Teacher Effectiveness in the Elementary School: What We Know About It Now." Journal of Teacher Education 30 (1979): 52-64.

Good, T. "Research on Teaching." In What Research Says for Teacher Education, edited by K. Howry. Forthcoming.

Good. T., Ebmeier, H., and Beckerman, T. "Teaching Mathematics in High and Low SES Classrooms: An Emperical Comparison." Journal of Teacher Education 29 (1978): 85-90.

Gross, N., Giacquinta, J., and Bernstein, M. Implementing Organizational Innovations: A Sociological Analysis of Planned Educational Change. New York: Basic Books, 1971.

Gustafson, G. Personal communication. Ukiah, Calif., 1981.

Gutkin, J., Gersten, R., and Meyer, L. "Evaluation of P. S. 137 (New York City) Follow Through." Final report submitted to Joint Dissemination Review Panel, U. S. Department of Education. Eugene, Ore.: University of Oregon, College of Education, Follow Through Project, 1981.

Hall, G. E. Proposal submitted to the National Institute of Education. "The Role of the Site Administrator." Austin, Tex.: University of Texas, 1979.

Hall, G. E., Hord, S. M., and Griffin, T. H. "Implementation at the School Building Level: The Development and Analysis of Nine Mini-Case Studies." Paper presented at the annual meeting of the American Educational Research Association, April 1980, in Boston.

Herriott, R. E. and Gross, N. The Dynamics of Planned Educational Change. Berkeley, Calif.: McCutchan Publishing Corporation, 1979.

Hersey, P., and Blanchard, K. H. Management of Organizational Behavior: Utilizing Human Resources. Englewood Cliffs, N. J.: Prentice-Hall, 1977.

Howell, B. "Profile of the Principalship." Educational Leadership 38 (1981): 333-36.

Kennedy, M. "Findings from the Follow Through Planned Variation Study." Educational Researcher 7 (1978): 3-11.

Kerr, S. "Substitutes for Leadership: Their Meaning and Measurement." Organizational Behavior and Human Performance 22 (1978): 375-402.

Kerr, S., Schriesheim, C., Murphy, D. J., and Stogdill, R. M. "Toward a Contingency Theory of Leadership Based upon the Consideration and Initiating Structure Literature." Organizational Behavior and Human Performance 12 (1974): 62-82.

Leinhardt, G. "Program Evaluation: An Empirical Study of Individualized Instruction." American Educational Research Journal 14 (1977): 277-293.

Loucks, S., and Hall, G. E. "A Developmental Model for Determining Whether the Treatment is Actually Implemented." American Educational Research Journal 14 (1977): 264-276.

Lortie, C. Schoolteacher. Chicago: University of Chicago Press, 1975.

Mazzarella, J. A. The Principal's Role as an Instructional Leader. Burlingame, Calif.: Association of California School Administrators, 1977.

Medley, D. Teacher Competence and Teacher Effectiveness. Washington, D.C.: American Association of Colleges for Teacher Education, 1977.

Meyer, J. W., Scott, W. R., and Deal, T. E. "Institutional and Technical Sources of Organizational Structure Explaining the Structure of Educational Organizations." Paper prepared for a conference on Human Service Organizations, Center for Advanced Study in the Behavior Sciences, March 1979, at Stanford, Calif.

Miles. M. B., ed. Innovation in Education. New York: Teachers College Press, 1964.

Morimitsu, C. "Supervision of Direct Instruction." Unpublished manuscript. Eugene, Ore.: Follow Through Project, University of Oregon, 1979.

Morris, V. C., Crowson, R. L., Hurwitz, E., and Porter-Gehrie, C. The Urban Principal: Discretionary Decision-Making in a Large Educational Organization. Chicago: University of Illinois at Chicago Circle, College of Education, 1981.

Nagel, T., and McLevie, J. "Status Report 1 on the Progress of Implementing the Achievement Goals Program in San Diego Schools." San Diego, Calif.: San Diego Board of Education, 1981.

Parish, R. "Discontinuation of Innovation Programs through the NDN." Ph.D. dissertation, University of Oregon, 1981.

Peterson, S. M. "Implementation Study, Year 2: Results from Administration of the Stages of Concern Questionnaire." Los Altos, Calif.: John Emrick and Associates, 1980.

Pincus, J. "Incentives for Innovation in the Public Schools." Review of Educational Research 44 (1974): 113-144.

Ranson, S., Hinings, B., and Greenwood, R. "The Structuring of Organizational Structures." Administrative Science Quarterly 25 (1980): 1-17.

Rosenshine, B. "Direct Instruction for Skill Mastery." Paper presented at the Learning Research and Development Center, February 1980, at the University of Pittsburgh.

Rosenshine, B. V., and Berliner, D. C. "Academic Engaged Time." British Journal of Teacher Education 4 (1978): 3-16.

Rutter, M., Maughan, B., Mortimore, P., and Ouston, J. Fifteen Thousand Hours: Secondary Schools and Their Effects on Children. Cambridge, Mass.: Harvard University Press, 1979.

Scott, R., and Walberg, H. "Schools Alone Are Insufficient: A Response to Edmonds." Educational Leadership 37 (1979): 24-27.

Seashore-Lewis, K., and Spencer, G. J. "Effective Change Agents: Some Contextual and Social Psychological Predictors." Paper presented at the annual meeting of the American Educational Research Association, April 1981, in Los Angeles.

Stallings, J. Implementation and Child Effects of Teaching Practices in Follow Through Classrooms. Monographs of the Society for Research in Child Development, no. 40. 1975.

Stallings, J. A. "Allocated Academic Learning Time Revisited, Or Beyond Time On Task." Education Research 9 (1980): 11-16.

Stebbins, L., St. Pierre, R., Proper, E., Anderson, R., and Cerva, T. Education as Experimentation: A Planned Variation Model. Vols. IVA-D. Cambridge, Mass.: Abt Associates, 1977.

Weber, G. Inner City Children Can Be Taught to Read: Four Successful Schools. Occasional Papers, no. 18. Washington, D.C.: Council for Basic Education, 1971.

Weick, K. E. "Educational Organizations as Loosely Coupled Systems." Administrative Science Quarterly 21 (1976): 1-19.

Wolcott, H. The Man in the Principal's Office. New York: Holt, Rinehart and Winston, 1973.

Wolcott, H. Teachers Vs. Technocrats: An Educational Innovation in Anthropological Perspective. Eugene, Ore.: University of Oregon, Center for Educational Policy and Management, 1977.

Wyant, S. H., with Reinhard, D., and Arends, R. Of Principals and Projects. Reston, Va.: Association of Teacher Educators, 1980.